

HEXAVALENT CHROMIUM (Cr VI) BY COLORIMETRIC METHOD**SM 20th Ed 3500-Cr B**

Facility Name: _____ VELAP ID: _____

Assessor Name: _____ Analyst Name: _____ Inspection Date: _____

Relevant Aspect of Standards**Method
Reference****Y****N****N/A****Comments**

Records Examined: SOP Number/ Revision/ Date _____ Analyst: _____

Sample ID: _____ Date of Sample Preparation: _____ Date of Analysis: _____

Hexavalent Chromium

Were sample pH's adjusted to pH 9.3-9.7 using ammonium sulfate buffer solution, cooled to $\leq 6^{\circ}\text{C}$, and analyzed within 28 days? *(The preservation temperature does not apply to samples analyzed within 15 minutes of collection.)*

40 CFR 136.3
Table II
Footnotes 18,
20

Chromium

If total chromium was determined, was the sample acidified with HNO_3 upon collection to a pH < 2?

3500-Cr A 3
Intro

If dissolved chromium was determined, was the sample acidified to a pH < 2 with HNO_3 upon collection only after filtration through a 0.45 μm filter?

3500-Cr A 3
Intro

Were samples with turbidity NTU > 1 digested? (Applicable mainly to unfiltered samples.)

3030 E

For sample digestion, was concentrated HNO_3 first added to a sample aliquot which was then brought to a slow boil?

3030 G 3

For sample digestion, was concentrated H_2SO_4 next added to the sample aliquot, and the sample aliquot heated until SO_3 fumes appeared?

3030 G 3

Were sample aliquots next oxidized with potassium permanganate before reacting with diphenylcarbazide? (Necessary for samples with turbidity < 1 NTU as well.)

3500-Cr B 1
a

Procedure

Was spectrophotometer used at 540 nm, or did filter photometer have a maximum transmittance near 540 nm?

3500-Cr B 2
a

Notes/Comments:

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Relevant Aspect of Standards	Method Reference	Y	N	N/A	Comments
Was glassware acid washed, never exposed to chromic acid, and free from scratches?	3500-Cr B 2 c				
Were standards carried through the same preparations as samples?	3500-Cr B 4 a				
Were several drops of methyl orange indicator followed by drops of ammonium hydroxide first added to samples until they turned yellow?	3500-Cr B 4 d				
Was H ₂ SO ₄ added to samples next until they were acidic?	3500-Cr B 4 d				
Were samples next heated to boiling?	3500-Cr B 4 d				
Were drops of potassium permanganate added to boiling samples until they turned red?	3500-Cr B 4 d				
Were samples next boiled for 2 minutes longer followed with addition of sodium azide solution until red color faded?	3500-Cr B 4 d				
Were samples finally boiled for 1 more minute?	3500-Cr B 4 d				
After cooling, were portions of phosphoric acid solution added to samples followed by adjustment of pH to 1.0 ± 0.3 with H ₂ SO ₄ ?	3500-Cr B 4 e				
Was diphenylcarbazide solution added to samples and the color allowed to develop?	3500-Cr B 4 e				
Were samples absorbances read, and their absorbances corrected by the absorbance of a blank carried through all preparations?	3500-Cr B 4 e				
Notes/Comments:					

